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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,022	04/18/2001	Hiroshi Kimura	TKA0029	7517

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EXAMINER

MITCHELL, JAMES M

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,022

Applicant(s)

KIMURA, HIROSHI

Examiner

James Mitchell

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other.

DETAILED ACTION

Claim Objections

Claim 5 objected to because of the following informalities: the word monitoring should be substituted with mounted pursuant original its claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn (US 6,166,430) in combination with Jung et al. (US 6,333,252) and Kweon et al. (US 5,900,676)

Glenn (Fig 1-7) discloses a method of manufacturing a plurality of semiconductor devices comprising steps of forming an electrodeposition frame (via etched metal; Par. 0037, 0038, Line 1) on a flexible substrate (10), said electrodeposition frame having first metallic layers (20) and second metallic layers (24) for external extension being patterned, wherein the first metallic layers are thicker than said second metallic layers so that the rear surfaces of the first and second metallic layers are flush with the bottom of the resin, contiguously mounting a semiconductor (28) with inherent electrode pads thereon on said first metallic layers, wire bonding (29) the electrode pads to said second metallic layers, resin-sealing (30) said semiconductor element mounted on said

electrodeposition frame is resin sealed with said semiconductor and using the substrate as a lower die, removing said substrate (Par 0053) to provide a resin sealing body; cutting said second metallic layers (Fig 11, 13) and cutting a resin sealing body into individual semiconductor devices (Par. 0056).

Glenn does not appear to disclose that said substrate is a metallic flexible substrate or after cutting depositing metallic thin film portions on the first and second metallic layers that are exposed from a rear surface of said resin sealing body.

Jung utilizes an inherently flexible metallic substrate (260).

It would have been obvious to one of ordinary skill in the art to form the substrate of Glenn as a metallic substrate as an alternate process in order to encapsulate a semiconductor chip with exposed leads (Fig 9-11; Col. 2, Lines 1-2).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a metallic substrate as an alternate temporary substrate, since it has been held that to be within the general skill of a worker in the art to select known material on the basis of its suitability for intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416 (1960).

With respect to claim 6, Kweon (Fig 15; 150) utilizes depositing metallic thin film portions on the first and second metallic layers that are exposed from a rear surface of said resin sealing body.

It would have been obvious to one of ordinary skill in the art to deposit metallic thin film portions on the first and second metallic layers that are exposed from a rear

surface of said resin sealing body in order to provide electrical and mechanical connection as taught by Kweon (Col.7, Lines 16-19).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glen and Jung as applied to claim 5 and further in combination with Matsushita (JP 2001-024001.)

Neither Glen nor Jung appears to disclose cutting through the sealing resin and a centerline of each second metallic layer.

However, Matsushita (Fig a-h) discloses cutting through the sealing resin and a centerline of each second metallic layer.

It would have been obvious to one of ordinary skill in the art to modify manufacturing process by the number of leads etched in Glenn, such that each lead is attached to two dies and then the sealing resin and a center line of each second metallic layer is cut in order to reduce cutting process time as taught by Matsushita (English Advantage).

Response to Arguments

Applicant's arguments with respect to claims 5-8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Mitchell whose telephone number is (703) 305-0244. The examiner can normally be reached on M-F 10:30-8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (703) 305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3230 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

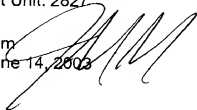
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jmm

June 14, 2003

A large, stylized handwritten signature in black ink, appearing to be 'JMM'.A handwritten signature in black ink, appearing to be 'R. [unclear]'.

SUPERVISOR EXAMINER
TECHNICAL STAFF 2800